Complete Summary

GUIDELINE TITLE

Small solute clearance targets in peritoneal dialysis.

BIBLIOGRAPHIC SOURCE(S)

Johnson D, Brown F, Lammi H, Walker R. Small solute clearance targets in peritoneal dialysis. Nephrology 2005 Oct;10(S4):81-5.

Johnson D, Brown F, Lammi H, Walker R. Small solute clearance targets in peritoneal dialysis. Westmead NSW (Australia): CARI - Caring for Australians with Renal Impairment; 2005 Jul. 13 p. [29 references]

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

End-stage kidney disease (ESKD)

GUIDELINE CATEGORY

Evaluation
Management
Treatment

CLINICAL SPECIALTY

Nephrology
Nursing

INTENDED USERS

Allied Health Personnel
Nurses
Physicians

GUIDELINE OBJECTIVE(S)

To review the available evidence for benefit of maintaining small solute clearance targets in peritoneal dialysis

TARGET POPULATION

Patients with end-stage kidney disease (ESKD) on continuous ambulatory peritoneal dialysis and automated peritoneal dialysis

INTERVENTIONS AND PRACTICES CONSIDERED

Evaluation

1. Kt/V target
2. Minimum weekly corrected creatinine clearance (C_{cr}) targets
3. Small solute clearance
4. Residual renal function
    - Fluid status: total body water
    - Nutritional status
    - Tolerance of dialysis prescription
5. Physical measurements
    - Body mass index (BMI)
6. Clinical assessment of wellbeing and impact on patient's life

Management/Treatment

Peritoneal dialysis

- Maintain Kt/V target
- Maintain minimum weekly corrected C_{cr} target
- Modifications according to BMI

MAJOR OUTCOMES CONSIDERED

- Dialysis adequacy
    - Urea clearance (Kt/V)
    - Minimum weekly corrected creatinine clearance
- Patient wellbeing
- Quality of life
- Mortality

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Databases searched: Medical Subject Headings (MeSH) terms and text words for peritoneal dialysis were combined with text words for renal clearance, peritoneal clearance and small solute clearance and then combined with the Cochrane highly sensitive search strategy for randomised controlled trials. The search was carried out in Medline (1966 – October Week 2 2003). The Cochrane Renal Group Trials Register was also searched for trials not indexed in Medline.

Dates of searches: 18 November 2003; 25 November 2003.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of Evidence

Level I: Evidence obtained from a systematic review of all relevant randomized controlled trials (RCTs)

Level II: Evidence obtained from at least one properly designed RCT

Level III: Evidence obtained from well-designed pseudo-randomized controlled trials (alternate allocation or some other method); comparative studies with concurrent controls and allocation not randomized, cohort studies, case-control studies, interrupted time series with a control group; comparative studies with historical control, two or more single arm studies, interrupted time series without a parallel control group

Level IV: Evidence obtained from case series, either post-test or pretest/post-test

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Comparison with Guidelines from Other Groups
Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Recommendations of Others. Recommendations regarding small solute clearance targets in peritoneal dialysis from the following groups were discussed: Kidney Disease Outcomes Quality Initiative, British Renal Association, Canadian Society of Nephrology, and European Best Practice Guidelines.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Definitions for the levels of evidence (I–IV) can be found at the end of the "Major Recommendations" field.

Guidelines

For continuous ambulatory peritoneal dialysis (CAPD) and automated peritoneal dialysis (APD), the weekly urea clearance (Kt/V) target should be ≥ 1.6/week. The minimum weekly corrected creatinine clearance (C_{cr}) target would be 60 L/week in high and high-average peritoneal transporters; and 50 L/week in low-average and low peritoneal transporters. (*Level II evidence*)

Suggestions for Clinical Care

(Suggestions are based on Level III and IV sources)

- Peritoneal dialysis (PD) adequacy should involve various measurements including clinical assessment of wellbeing, physical measurements, small solute clearance, fluid removal and the impact of treatment on the individual's life. Small solute clearance measurements should be interpreted in the context of all the clinical and laboratory assessments of dialysis adequacy. Measured clearances that fall short of the recommended targets should not necessarily be interpreted as providing inadequate dialysis, and measured clearances in excess of recommended targets should not necessarily be viewed as representing adequate dialysis.
- These recommendations need to be modified in patients with low body mass index (BMI) or excessive BMI. For patients with a BMI greater than 27.5 kg/m^2, normalised clearance values may be difficult to achieve (see the discussion in the original guideline document for more information). Adequacy needs to be interpreted in the context of the individual's body size.
- The impact of residual renal function (RRF) appears to be an important determinant of outcome. The contribution of a falling RRF to clearance targets needs to be assessed in the clinical context of the patient's wellbeing, fluid status, nutritional status as well as tolerance of dialysis prescription.

Definitions:

Levels of Evidence

Level I: Evidence obtained from a systematic review of all relevant randomized controlled trials (RCTs)

Level II: Evidence obtained from at least one properly designed RCT

Level III: Evidence obtained from well-designed pseudo-randomized controlled trials (alternate allocation or some other method); comparative studies with concurrent controls and allocation not randomized, cohort studies, case-control studies, interrupted time series with a control group; comparative studies with historical control, two or more single arm studies, interrupted time series without a parallel control group

Level IV: Evidence obtained from case series, either post-test or pretest/post-test

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Appropriate management of patients with end-stage kidney disease on peritoneal dialysis

POTENTIAL HARMS

Not stated

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

Implementation and Audit

1. In reporting to the Australia and New Zealand Dialysis and Transplant Registry (ANZDATA), encourage measurements of residual renal function, peritoneal creatinine clearance, renal creatinine clearance, peritoneal Kt/V and renal Kt/V.
2. Encourage identification of patients with body mass indexes (BMIs) outside the accepted normal range to enable separate analysis of the impact of body size on clearances and outcome.
3. Identify peritoneal transporter status at the commencement of continuous ambulatory peritoneal dialysis (CAPD) and in subsequent documentation of outcome.
4. Compare individual unit results with reported national averages.
5. Audit outcomes for CAPD versus automated peritoneal dialysis (APD) at comparable weekly total small solute clearances.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2005 Oct

GUIDELINE DEVELOPER(S)

Caring for Australasians with Renal Impairment - Disease Specific Society

SOURCE(S) OF FUNDING

Industry-sponsored funding administered through Kidney Health Australia

GUIDELINE COMMITTEE

Not stated

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Authors: David Harris, Convenor (Westmead, New South Wales); Merlin Thomas (Prahran, Victoria); David Johnson (Woolloongabba, Queensland); Kathy Nicholls (Parkville, Victoria); Adrian Gillin (Camperdown, New South Wales)

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

All guideline writers are required to fill out a declaration of conflict of interest.

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the Caring for Australasians with Renal Impairment (CARI) Web site.

Print copies: Available from Caring for Australasians with Renal Impairment, Locked Bag 4001, Centre for Kidney Research, Westmead NSW, Australia 2145

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- The CARI guidelines. A guide for writers. Caring for Australasians with Renal Impairment. 2006 May. 6 p.

Electronic copies: Available from the Caring for Australasians with Renal Impairment (CARI) Web site.

PATIENT RESOURCES

None available

NGC STATUS

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